

Claims:

1. An antibody or antibody derivative against factor IX/factor IXa which increases the procoagulant activity of FIXa.
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2. An antibody or antibody derivative according to claim 1, wherein said antibody or antibody derivative increases the procoagulant activity of FIXa in the presence of FVIII inhibitors.
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3. An antibody according to any one of claim 1 wherein said antibody is selected from the group consisting of IgG, IgM, IgA and IgE antibodies.
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4. An antibody or antibody derivative according to claim 1, wherein said antibody or antibody derivative is selected from the group consisting of monoclonal antibodies, antibody fragments, chimeric antibodies, humanized antibodies, single chain antibodies, bispecific antibodies, diabodies, and di-, oligo- or multimers thereof.
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5. An antibody derivative according to claim 1, wherein said antibody derivative comprises a complement determining region (CDR) peptide.
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6. An antibody derivative according to claim 5, wherein said CDR peptide is a CDR3 peptide.
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7. An antibody derivative according to claim 6, wherein said CDR3 peptide comprises an amino acid sequence selected from the group consisting of:
Tyr-Gly-Asn-Ser-Pro-Lys-Gly-Phe-Ala-Tyr;
35 Cys-X-X-Tyr-Gly-Asn-Ser-Pro-Lys-Gly-Phe-Ala-Tyr-X-X-Cys,
wherein
X may be any desired amino acid;

Tyr-Gly-Asn-Ser-Pro-Lys-Gly-Phe-Ala-Tyr;
Asp-Gly-Gly-His-Gly-Tyr-Gly-Ser-Ser-Phe-Asp-Tyr; and
Phe-Arg-Asn-Arg-Gly-Met-Thr-Ala-Leu-Leu-Lys-Val-Ser-Ser-
Cys-Asp.

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8. An antibody or antibody derivative according to
claim 1, wherein the variable region of said antibody or
antibody derivative comprises amino acids 1 to 357
and/or amino acids 403 to 726 according to Fig. 14.

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9. An antibody or antibody derivative according to
claim 8, wherein said antibody or antibody derivative
additionally comprises an artificial linker sequence.

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10. An antibody or antibody derivative according to
claim 1, wherein the variable region of said antibody or
antibody derivative comprises amino acids 1 to 363
and/or amino acids 409 to 747 according to Fig. 15.

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11. An antibody or antibody derivative according to
claim 10, wherein said antibody or antibody derivative
additionally comprises an artificial linker sequence.

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12. An antibody or antibody derivative according to
claim 1, wherein the variable region of said antibody
or antibody derivative comprises amino acids 1 to 366
and/or amino acids 412 to 747 according to Fig. 16.

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13. An antibody or antibody derivative according to
claim 12, wherein said antibody or antibody derivative
additionally comprises an artificial linker sequence.

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14. A hybridoma cell line expressing an antibody or
antibody derivative against factor IX/factor IXa
according to claim 1.

15. A hybridoma cell line according to claim 14, wherein said cell line is selected from the group consisting of #196/AF1, #196/AF2, #193/AD3, #193/K2-1, #198/AC1/1, #198/AM1, #198/A1, #198/B1, #198/AP1,
5 198/A1, 198/B1, 198/BB1, 198/A1, 198/B1, 198/BB1.
16. An antibody or antibody derivative according to claim 1, which is expressed by a hybridoma cell line according to claim 14.
- 10 17. A DNA molecule, wherein said DNA molecule encodes an antibody or an antibody derivative according to claim 1.
- 15 18. A pharmaceutical preparation comprising an antibody or antibody derivative according to claim 1 and a pharmaceutically acceptable carrier.
19. A preparation according to claim 18, additionally
20 comprising factor IX α and/or factor IX α β .
20. A method for treating patients afflicted with blood coagulation disorders comprising administering a pharmaceutically effective amount of the preparation of
25 claim 18 to said patients.
21. The method of claim 20, wherein said blood coagulation disorders are selected from the group comprising hemophilia A and hemorrhagic diathesis.
- 30 22. The method of claim 21, additionally comprising the step of selecting hemophilia inhibitor patients.
23. A method of obtaining an antibody or antibody
35 derivative which intereacts with factor IX/factor Ixa and increases the procoagulant activity of Factor IX α , comprising the steps of:

- immunizing an immunocompetent mouse with an antigen selected from the group consisting of FIX, FIXa α , FIXa β or fragments thereof,
- isolating spleen cells of the immunized mouse,
- 5 - producing hybridoma clones,
- screening the hybridoma cell supernatants for an increase in the procoagulant activity of Factor Ixa, isolating and purifying the antibodies or antibody derivatives from hybridoma cell supernatants which
- 10 exhibit an increase in the procoagulant activity of factor IXa.

24. Use of an antibody or antibody derivative according to claim 1 for increasing the amidolytic activity of

15 factor IXa.